Manitoba

Annual Report 1986 - 87

The Clean Environment Commission

Manitoba

Minister of
Environment and
Workplace Safety and Health

Room 156
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

(204) 945-3522

His Honour,
The Honourable George Johnson,
Lieutenant-Governor of Manitoba,
Room 235 Legislative Building,
Winnipeg, Manitoba.
R3C 0V8

Your Honour:

The undersigned has the honour to present the Annual Report of The Clean Environment Commission detailing its activities for the fiscal year ending March 31st, 1987.

Yours sincerely,

Gerard Lecuyer,
Minister of Environment and
Workplace Safety and Health

Manitoba

Clean Environment Commission

Office of the Chairperson

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The Honourable Gerard Lecuyer,
Minister of Environment and Workplace
Safety and Health
Room 156 Legislative Building,
Winnipeg, Manitoba.
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Dear Mr. Lecuyer:

Pursuant to the provisions of Section 11 of The Clean Environment Act, The Clean Environment Commission herewith transmits to you, as Minister responsible, its Annual Report.

Section 11(1) of The Clean Environment Act provides that the annual report of the Commission shall include:

(a) the investigations and hearings conducted by the Commission;

(b) the orders made;

(c) regulations made under this Act;

(d) a review of the state of the environment;

(e) such other matters as the minister may require.

In the discharge of its responsibilities under that subsection of the Act, The Clean Environment Commission is pleased to submit the particulars set forth in the following pages of its Annual Report for the fiscal year ending March 31st, 1987.

Submitted on behalf of the Commission.

O. Stanley Eagleton,
Chairperson.

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Preface

The Clean Environment Commission is a quasi-judicial body which issues orders defining limits, terms and conditions for operations that have the potential for the discharge of contaminants into the environment. The Commission reports to the Environment Minister but it is independent of the Environment Department and the careers of the lay persons who make up the Commission are not generally connected with government service. While the Commission gives due consideration to the representations of industries, utilities, municipal governments, provincial government departments, and to the advice of environmental experts, the members are also attuned to the concerns of citizens whose lives may be affected by the limitations of emissions under consideration by the Commission. The Commission also is careful to avoid any conflict of interest on the part of its members in connection with any matter under consideration.

It is important to note that, for each proposal or registration referred to the Commission for consideration, a detailed report, with recommendations, from the Environmental Management Division of the Department of Environment and Workplace Safety and Health is received. These reports and recommendations provide a key element in the Commission's subsequent consideration in all matters under review.

To make sure that the process of pollution control in Manitoba is carried out with public participation, The Clean Environment Act requires the Commission to advertise all applications received. This provides advance public warning of undertakings likely to emit pollutants into the environment. The Commission is required to hold a hearing when a request is made by any member of the public likely to be affected by an order of the Commission. The Commission distributes technical reports and other relevant information received in advance, from all sources, to persons expressing an interest in a hearing so that participants in the hearing process will be as well informed as possible on the matter under consideration. The hearing process also ensures that there is full public clarification of details of operations being reviewed.

Manitobans have the opportunity, through the hearing process, to participate in environmental control and to question operators of contaminant emitting industries, as well as government and other experts, and thus directly influence the decision-making process. Citizens of Manitoba have a clear right to be heard by the Commission which, in its orders, regulates the limits, terms and conditions of operations that, under law, control potentially polluting enterprises in the Province. Individual citizens who participate in hearings can and do affect the decision of the Commission with regard to the forthcoming order.

In providing a forum for public participation, together with information to ensure that such participation is meaningful, the Commission also provides a chance for all parties affected by an environmental matter to meet and learn about a potential problem and an opportunity to bring difficulties and concerns into the open. Sometimes the resulting intercommunication between interest groups will avoid or reconcile adversary situations. In order to facilitate participation, hearings are held in the community in which the matter under consideration is located.

Finally, the Commission considers that those who have a right to be informed of operations that may pollute the environment and to be heard regarding their concerns also have a right to be informed of the outcome of the Commission's deliberations. For this reason, copies of the Commission's rulings and orders are forwarded to the persons who attended the hearing.

The Commission's orders are subject to appeal to the Provincial Environment Minister within thirty days of issue. The fact that a hearing has been held and evidence and representations have been recorded provides a background of record if an appeal is made.

The Commission provides a sound basis for public participation in matters of environmental control. In order to function successfully, the system requires continuing public interest and active public participation. Positive and beneficial results occur when this ingredient is present and The Clean Environment Commission looks forward to broadly based and informed public participation in its activities in the future.

The Clean Environment Commission

The Clean Environment Commission is a quasi-judicial body appointed by Order-in-Council under the terms of The Clean Environment Act (Chapter C130 of the Consolidated Statutes of Manitoba), which stipulates that the Commission shall consist of not less than three members, so appointed.

During the period under review, the Commission membership consisted of several Manitoba citizen appointees and a full-time chairperson, working with a support staff of three. The Commission reports to the Minister responsible for the administration of The Clean Environment Act. The Honourable Gerard Lecuyer serves in this capacity as Minister of Environment and Workplace Safety and Health.

The Commission membership during the fiscal year 1986-87 was as follows:

Mr. Stan Eagleton	Civil Servant, Winnipeg, Chairperson
Dr. Barrie Webster	Professor, University of Manitoba, Winnipeg, Vice-chairperson
Dr. Robert Aukes	Professor, University of Manitoba, Winnipeg, Commissioner
Dr. George Bowen	Organic Chemist, retired, Winnipeg, Commissioner, appointment rescinded June 30, 1986.
Prof. Ray Chant	Professor, University of Manitoba, Winnipeg, Commissioner, appointment rescinded, June 30, 1986.
Mr. Peter Ducheck	Farmer, Lockport, Commissioner
Mrs. Mamie Hendren	Hospital Worker, Thompson, Commissioner
Ms. Linda Kutcher	Consultant, Winnipeg, Commissioner, appointment rescinded, July 16, 1986.
Ms. Elizabeth Pawlicki	Real Estate Agent, Winnipeg, Commissioner, appointed August 22, 1986.

Regretfully Dr. George Bowen passed away a short time after finishing his work with the Commission. He will be remembered for his service to Manitoba in his years as Assistant Deputy Minister of Environment and, following his retirement from the Civil Service, for his contribution as a member of The Clean Environment Commission.

Background and Responsibilities

As in most jurisdictions in North America, the original environmental legislation in Manitoba appeared in The Public Health Act which prescribed basic restrictions designed to protect water and to avoid excessive nuisance conditions resulting from industrial operations and utilities. However, during the mid-1930's, difficulties were encountered with water quality in the various municipalities making up the Greater Winnipeg area which were discharging inadequately treated or untreated sewage to the Red and Assiniboine Rivers. In response to this difficulty, the Prevention of Water Pollution Control Act was passed by the provincial government in 1935. As required by this Act, a Provincial Sanitary Control Commission was appointed to regulate water pollution control problems. From 1935 to 1968, this Commission issued 150 licences in its endeavours to regulate and control sources of contamination of the waters of the province. The membership of this Commission was comprised entirely of senior civil servants whose freedom of action was necessarily restricted by departmental policies. Although the Act conferred broad powers on the Commission, the scope of its action, in practice, was limited by interjurisdictional and departmental policy and administrative considerations.

During the 1960's, a new environmental awareness and concern developed along with a growing realization of the finite capacity of the environment to absorb contamination. This led to a realization that improved methods would have to be developed to control contamination and to protect and preserve the environment. In response to these concerns, in 1968, the Government of Manitoba passed The Clean Environment Act. This Act repealed and replaced the Prevention of Waters Pollution Control Act. Comprehensive protection was afforded by the Act not only to the waters of Manitoba but also to the air and land of the province. This provided a uniform basis for dealing with environmental pollution problems which compared favourably with the legislation developed in some other jurisdictions where, in addition to provisions and regulations under their Public Health Acts, separate clean air acts and waste control acts, were established. The legislation in Manitoba tended to unify the structure of the environmental regulations and the environmental regulations and the environmental control administrative organization.

A basic requirement of Manitoba's Clean Environment Act was a requirement that the water, soil and air of Manitoba must not be polluted in excess of limits prescribed either in regulations issued under the Act or in orders issued by The Clean Environment Commission. The Act established the Commission and provided it with jurisdiction to carry out a licencing function by the approval of control orders to regulate the emission of contaminants to the environment. This jurisdiction extended to all industries and activities whether operated by the private sector or by provincial or municipal governments. The Commission's jurisdiction also included the investigation of matters affecting the environment.

In keeping with the broad range of public interest and concern, The Clean Environment Act made provision for public participation in environmental regulation including a statutory requirement for the Clean Environment Commission to hold public hearings in specific circumstances. The first of these requirements was for hearings to be held whenever a representation was received from any person who was likely to be affected by a proposal or registration filed under the Act by an industry or operation that could emit contaminants to the environment. Provision was also made for the Commission to hold public hearings when investigating any matter affecting its responsibilities or to ascertain whether an operation was in compliance with an order of the Commission or a regulation issued under the Act. A hearing was also required when an application had been made to suspend one of the Commission's orders for a period of more than fourteen days, when any person filed a representation concerning a proposed variation of one of the Commission's orders, or when an application was made by a municipality for an abatement project under the Act.

Programs and Activities

Reporting Period

The Clean Environment Act provides that the Commission shall submit an annual report of its activities and of the state of the environment. Since its inception, the Commission had submitted these reports based on the calendar year. However, to provide uniformity in the reporting period for all departments, boards and commissions, the Provincial Auditor has requested that annual reports cover the fiscal year commencing April 1 and extending to March 31 of the following year. To achieve this condition. The Commission's previous report covered a fifteen month period from January 1, 1985 to March 31, 1986. The present report covers the fiscal year period from April 1, 1986 to March 31, 1987 and subsequent reports will be made covering a similar 12 month period.

Meetings and Hearings

During the fiscal year from April 1, 1986 to March 31, 1987, the Commission held twenty-two regular meetings of its members to transact the business of the Commission. On fourteen occasions visitors attended these meetings at the Commission's invitation to discuss a variety of matters including seven clients who wished to discuss control orders being considered in circumstances where no public hearing was held because no public expression of concern had been received. Two other visitors attended at their own request to discuss temporary suspension of the terms of control orders to accommodate local problems and on two other occasions invited persons attended to give the Commission the benefit of their view and experience. In addition, representatives of the Environment Department and other departments of the Manitoba Government attended many meetings to provide advice and recommendations to the Commission in connection with matters under consideration.

The Commission also held a total of thirty-three public hearings during the fiscal year. A number of categories can be identified to illustrate the types of hearings and the matters under discussion. Ten of the hearings took place as a result of requests from persons who wished their representations to be heard, four were held to consider variations being proposed for orders issued previously by the Commission, five were for the purpose of having the Commission review the terms and conditions of orders already in existence and fourteen were held by the Commission to investigate aspects of the development of a hazardous waste program for Manitoba and to ensure there was broad public participation in the process.

Public hearings were held in nineteen different locations throughout Manitoba. The largest number took place in Portage la Prairie where a total of six hearings were held. Four were held in Brandon, three took place in Flin Flon, three in Winnipeg and two each in Dauphin, Steinbach and Swan River. Hearings were also held in Arborg, Beausejour, Elie, Fisher Branch, Glenboro, Lynn Lake, Morden, Neepawa, Pine Falls, The Pas and Thompson.

Protection of the Environment

General

A very su..stantial measure of protection is provided in those sections of The Clean Environment Act that refer to the limitation of contamination. The word "contaminant" is given a broad definition including any substance that is foreign to or in excess of natural constituents of the environment that is likely to affect the natural environment or be injurious to health or damaging to plant or animal life. Emissions considered include any liquid, solid, or gas and also such characteristics as odour, heat, sound, vibration and radiation. The result of the breadth of these definitions is the capability to provide a wide spectrum of protection to citizens and to the environment from pollution sources where contamination of the air, soil or water can occur.

The specific application of the Act begins with a requirement for the submission of a registration by any person operating a plant, undertaking, or process which is likely to be a source of contamination. Registrations are filed with the department where new operations are being constructed, expanded or modified. Registrations are also submitted to cover existing operations, sometimes following the receipt of complaints about emissions. Where there are no covering regulations, these registrations are referred to The Clean Environment Commission for the issuance of a control order. The Commission also receives an environmental report and recommendations for appropriate control measures from Environmental Control Services of the Environmental Management Division.

Following this referral and receipt of the report, the Commission advertises its intention to make an order in appropriate newspapers as required by the Act. The Commission's advertisements provide a description of the nature and locations of the operations and state that, if any person who is likely to be affected files a representation in writing, the Commission will hold a public hearing in accordance with the statutory

requirement contained in the Act. Copies of the environmental report prepared by the department are forwarded by the Commission to the operators and to the municipalities in which the operations are located as well as to any citizens from whom requests have been received.

Following the holdings of a public hearing, if such is required, the Commission proceeds to issue its control order. This order, which limits the emissions and may prescribe other appropriate terms and conditions, is legally binding on the applicant. The operation is then monitored by members of the environment department staff who may take enforcement action in the event the limits, terms and conditions are not being met.

The following segments provide brief descriptions of a number of operations dealt with by the Commission during the period under review.

Air Pollution Control

In the fiscal year 1986-87 the Commission dealt with a number of plants and operations resulting in orders to control emissions to the atmosphere and thus prevent pollution from airborne emissions. Operations considered included the following:

McCain Foods Limited

The McCain potato processing plant in Portage la Prairie was first reviewed by the Commission at hearings in 1979-80 and a control order was issued at that time to set limits on emissions into the atmosphere. An expansion of the plant capability was reviewed at a hearing in July, 1986, when the Commission received representations from a large number of people living in a nearby residential subdivision. These complaints concerned odours from wastewater handling and from food preparation processes and also noise from plant processes and road and rail traffic in connection with the business. The company outlined improvements that could be made to plant equipment and operations and undertook to sample community opinion to obtain feedback about the nature and extent of concerns in the neighbourhood. The Commission issued a new control order which temporarily adjusted the noise emissions limits. This order was set for further review late in 1987.

Publishing Plants in Winnipeg

A number of publishing companies have had plants in Winnipeg for many years. However, these were not registered and referred to the Commission for regulation until a complaint was received by the Department of Environment in 1985. On receipt of concerns from a resident concerning the Canadian Publishers Company Limited plant in the Inkster Industrial Park on Dunlop Avenue a registration was obtained under the provisions of the act and referred to the Commission. The Commission held a hearing to review the matter and received representations from a resident having an allergic sensitivity to the solvent odours emitted by the plant. Following the hearing the Commission requested further information of the nature and environmental significance of the substances involved. It was also considered desirable to review other comparable printing plants to ensure there was fairness and equal applicability of the regulatory process.

In June of 1986, after receiving additional information requested by the Commission, the consideration was resumed. The Commission also received and processed proposals under the Act for LGM Graphics Inc. and the United Grain Growers' The Public Press publishing plant operations. Control orders were issued to Canadian Publishers Company Limited in July 1986 and to the other two operators in February, 1987, setting limits on odour, particulates and on the opacity of visible emissions to the atmosphere.

Canadian Occidental Petroleum Ltd., Brandon

The Clean Environment Commission first became involved with this chemical manufacturing plant in Brandon in 1976 when the first of its control orders was issued. At the time the plant was producing chlorine gas, caustic soda, soda ash and hydrochloric acid as well as sodium chlorate — a full range of products obtained from the electrolysis of brine. In 1978, notice was received that production at the plant would be limited to sodium chlorate only and a varied control order was issued that year to deal with the changed requirements of this operation. Finally, in 1986, notice was received that the plant processes would be substantially modernized by the installation of new equipment. The energy efficient modernization would feature the recycling of hydrogen, the major process off gas, as a fuel in the plant boilers. After receiving a complaint from a nearby resident, the Commission held a hearing in Brandon in October, 1986 to review the company's proposed expansion and inspect the changes taking place in the plant. Evidence at the hearing indicated that a substantial investment was being made to improve efficiency and extend the useful life of the plant in the years to come. A new control order was issued in December, 1986, to prescribe limits on emissions to the atmosphere.

Abex Industries Ltd., Steel Smelter, Selkirk

Abex Industries Ltd. appears in the list of orders issued by the Commission in 1986-87 by virtue of an appeal filed earlier with the Minister of Environment and Workplace Safety and Health. The Commission has regulated this Company by order since 1973 and the latest control order issued in 1985 set limits, terms and conditions on particulates, visible emissions and noise. In its appeal the Company contended that the limit on visible emissions was too restrictive. A varied control order, directed by an order-in-council, deleted the limitation on visible emissions while retaining the other limits, terms and conditions. The Company was also ordered to commence a study into ways of further limiting visible emissions from the smelter process.

Manitoba Hydro, Brandon Generating Station

Manitoba Hydro has operated a coal fired thermal generating station at Brandon for many years. The plant provides power on demand to augment the otherwise almost exclusive hydro based power generation. This station was the object of a 1984 hearing. It is not a source of serious contamination, largely because of its intermittent operation and the low sulphur content of the Saskatchewan lignite coal used in its operation. In 1986 a provision in the control order would have required the installation, at considerable expense, of emission monitoring equipment high on the main smokestack of the plant. In a detailed submission, Hydro contended that, since the plant was a part-time operation and since comparable sampling results could be obtained by alternative monitoring facilities mounted in the breech duct that leads to the stack, the expense of a stack mounted sampling facility was not justified. After consultation, and with the agreement of the Environment Division, the Commission approved a variation of the order allowing this.

Springhill Farms Ltd., Pork Processing Facility, Neepawa

In June of 1986 the Commission received an environmental report on this proposed abattoir operation. Efforts were being made at that time to bring the major new meat production plant into operation by the earliest date possible. A hearing was convened early in July, 1986, in Neepawa to receive representations concerning the impact of the operation on the environment and on nearby residents. At the hearing the Commission was informed that plans called for the processing of 4,000 hogs per day with the need to dispose of waste products and in excess of 100,000 gallons per day of contaminated wastewater. The Town of Neepawa had agreed to construct a treatment plant for the purpose and this aspect of the operation is reported in the Water Pollution Control Section of this report. An order was issued setting limits on the emission of particulates, odour, noise and visible emissions to the atmosphere. In addition provisions were included in the order to ensure the proper disposal of animal wastes and the control of production to ensure that the wastewater plant provides adequate treatment for protection of the water quality of the Whitemud River.

Water Pollution Control

The preponderance of applications and proposals dealt with by the Commission in 1986-87 related to the control of the release of effluent to the waters of Manitoba from a variety of municipal and industrial sources. As an illustration of the scope of this commitment, descriptions of a number of these operations are provided in this section.

Town of Neepawa, Facility for the Treatment of Wastewater from the Springhill Farms Ltd. Abattoir

A proposal submitted on behalf of the Town of Neepawa by the Manitoba Water Services Board was referred to the Commission relating to the construction of a new wastewater facility to treat wastewater from the new hog processing plant being built by Springhill Farms Ltd., at a location east of the Town. In June, 1986 the Commission received a comprehensive environmental impact statement filed by the Town's consultant and an environmental assessment report filed by Environmental Control Services of Manitoba's Environment Department. The proposal called for the operation of a treatment facility located adjacent to the hog processing plant with discharge of treated effluent to the Whitemud River. Following receipt of concerns from the Town of Gladstone, whose water supply intake is located downstream on the same River, the Commission held a hearing in Neepawa on July 2 and 3, 1986. At the hearing the Manitoba Water Services Board and their engineering consultants explained the proposed facility and its expected operation. The consultants had developed an innovative design for the facility to treat the high strength waste from the abattoir operation. Particular attention was focused by the designers and by the environmental department representatives on the effective removal of ammonia and residual chlorine prior to release of the effluent, as these contaminants are harmful to fish. After reviewing the evidence and representations the Commission, on July 20, 1987, issued its control order covering operation of the wastewater facility at the same time as the order was issued to Springhill Farms Ltd., regulating the operation of the hog processing plant.

SherrGold Inc. Gold Mine and Mill, Lynn Lake

Late in the previous fiscal year the Commission received a comprehensive environmental impact statement from Sherritt Gordon Mines Limited in connection with the development of the new McLellan gold mine and mill. The mill was located in the town of Lynn Lake, utilizing existing mill facilities and the new mine was located a few kilometres outside the town. The Commission received notice of concern and representation from the Community Council of Granville Lake located downstream of the discharge from the proposed operations. The Commission held a hearing in Lynn Lake June 4 and 5, 1986. According to the evidence received, the design for the mine would produce no deleterious substances at discharge levels likely to cause unacceptable contamination of the Keewatin River into which the discharge of effluent from the mine was to take place. However, the proposal for the mill was the first in many years in Manitoba calling for the use of the cyanidization-carbon pulp gold extraction method. The presence of cyanide in the process raised concerns of the downstream community of Granville Lake whose residents depend on their ability to catch fish in Granville Lake and the connected waterways of the Keewatin River system and who utilize Granville Lake for their domestic water supply. This was also a concern to the environmental authorities and the designers of the treatment-disposal system. The system selected by the applicants specified storing the process wastewater from the Lynn Lake mill in a former open pit mine cavity and in storage ponds nearby followed by injection of the effluent into the adjacent abandoned underground workings of the old Farley Mine, where treatment of the cyanide content of the liquid was to take place over a retention period of several years before discharge to the Lynn River. It was also proposed that an additional wastewater treatment plant would be constructed if the cyanide content of the wastewater was not sufficiently reduced by the underground storage and treatment strategy. The Granville Lake Community Council representatives asked the Commission to ensure that their use of their natural heritage in the fishery would not be adversely affected by the mine and mill operations. They also requested information on the results of water quality sampling to be carried out by the Manitoba Department of Environment and Workplace Safety and Health. Following the hearing, the Commission issued separate control orders for the mine and mill operations and requested the Department to provide the water sampling data to the Community. Later in the year the first of the water quality monitoring reports was forwarded to the Community by the Environmental Control Programs Branch of the Department, with explanations of the analysis data contained in the report.

Hudson Bay Mining and Smelting Co., Limited, Flin Flon

In February, 1984, the Commission issued an order to the Hudson Bay Mining & Smelting Co. Ltd. prescribing limits and conditions on the main tailings area serving its mine-mill complex in Flin Flon and on the liquid effluent issuing from this operation. This order also specified that the order and the operation should be reviewed about the end of December, 1985. Part of this review concerned the progress achieved in implementing the Company's ten-year (1980-1990) plan for tailings area management and part related to the development of a preliminary plan for the eventual rehabilitation of the worksite and tailings area in and around Flin Flon. To allow time for the work of a co-ordinating committee of government and Company representatives to review these matters between hearings, the Commission's review hearing was set back by six months to June 11, 1987.

At the hearing the Company reported that, in accordance with the ten-year tailings management plan, improvements had been made in the control works, dykes and acidity control system and that exceedences of the acidity and zinc levels in the effluent, which had occurred with greater frequency during spring runoff or at times of heavy precipitation in previous years, had been greatly reduced as a result of these improvements. Preliminary work relating to site rehabilitation plan preparation had not been completed. The varied order issued by the Commission following the hearing prescribed the same limits, terms and conditions contained in the previous order and, in addition, made provision that the matter would be further reviewed in March, 1990, before the end of the period covered by the current tailings management plan.

Simplot Chemical Company Ltd., Brandon, Fertilizer Manufacturer

This hearing resulted from a request by the Company for a variation of the order issued to the Company in connection with the disposal of its liquid effluent. This effluent contains fertilizer, which if discharged to the Assiniboine River during the summer months, would stimulate undesirable plant and algae growth. To offset this problem the Commission's orders have prescribed the use of this effluent for the irrigation and fertilization of farm fields during the farm crop growing season. The variation requested in this instance was to permit the expansion of the season during which such irrigation is permitted. As the order had previously been appealed, the variation request was submitted to the Minister who directed the Commission to hold a hearing and submit a report and recommendations.

At the hearing in April evidence was presented by an expert witness to the effect that extension of the irrigation season to include weeks in the spring and fall when crops were not actually growing, would not be a cause for concern with regard to the amount of nitrogen being applied to the fields during the program. Following the hearing the Commission submitted its report and recommendations to the Minister. A new order was issued by the Commission at the minister's direction, on September 19, 1986, in compliance with the provisions of an order-in-council issued by the Manitoba Government, implementing the recommendations to permit extension of the irrigation season, in accordance with stated conditions.

Friendly Family Farms Ltd.,
Poultry Processing Plant, Steinbach

In another operation where the Commission's involvement began in the previous fiscal year, a hearing was held commencing in June, 1985, for the Friendly Family Farms Ltd. poultry processing plant in Steinbach. The wastewater treatment system serving this plant, which had been licenced in the 1960's was the subject of review. This review began when questions were raised by Environmental Control Services concerning wastewater disposal practices permitted by the previous license. During the first hearing the importance of the plant in the economy of southeastern Manitoba was emphasized, entailing as it did the direct employment offered and the impact on the farming economy of the region by processing fowl produced on many farms in the area. At this hearing the company requested an opportunity to further test its wastewater effluents and prepare an engineering study of its wastewater processing. To provide time for this study the hearing was adjourned and reconvened in April, 1986, at which time the engineering report was received and the control of environmental contamination was fully discussed. Following the hearing the Commission issued its control order in July, 1986, implementing the normal environmental protection standards to come into force two years later, in October, 1988. The company appealed this order to the minister responsible under the Clean Environment Act but this appeal was dismissed prior to the end of the fiscal year.

Town of Winnipeg Beach Sewage Lagoon System

In previous years the Commission held hearings regarding the elimination of problems encountered with sewage handling and disposal at Winnipeg Beach. The Town Council had undertaken a major project to expand the sewer pipe network within the Town and, in 1984, the Commission issued its order to limit the use of the sewage pump-out vehicles commonly used in previous years to convey wastes from private facilities to the sewage lagoon system. The order was appealed by the Town and, toward the end of the 1986-87 fiscal year, in response to the appeal, the Minister directed the Commission to vary the order originally issued. This variation made provision for delay in the implementation of certain of the upgrading measures and provided for limited flexibility in the periods of operation of the sewage trucks. The varied order was put in place in March, 1987.

City of Portage la Prairie Sewage Treatment Facilities

Over the years the City of Portage la Prairie had repeatedly encountered problems in the operation of its sewage treatment facilities. Early in 1986 the Commission received a request from the City for a further five year delay on the coming into force of new sewage effluent limits for discharges to the Assiniboine River. This was the fourth request of this nature received over the ten year period since the first control order was issued in 1976. The variation request was received by the Commission in January, 1986 and the Commission commenced public hearings in April of the same year. Owing to the need for review of the options open to the City and the need for study of the scope and nature of the technical problems being dealt with, the hearing was adjourned to September 3rd. When this hearing failed to resolve the outstanding issues there was a further adjournment and, following the delivery of requests from the Commission Chairperson to each of the hearing participants for specific information, the hearing concluded on November 7, 1986. Following extensive consideration, the Commission issued a varied order January 22, 1987. The order required the submission of a proposal for the final solution to the sewage problems within nine months and required submission of reports on progress toward completion of corrective works every three months commencing at the beginning of 1987. No new deadline date was established for compliance with normal effluent quality standards for discharges to the Assiniboine River; however, a further review of final plans to accomplish this was to take place at year end.

Town of Virden, Sewage Treatment Plant

As a result of complaints related to its previous wastewater treatment plant, which cause pollution of nearby Gopher Creek, the Town of Virden entered into cost-sharing agreements with the federal and provincial governments in 1977 for the construction of a new sewage treatment plant. The design chosen was for an innovative treatment concept involving the circulation of the wastewater into a deep underground shaft in order to achieve high pressures to effect a high concentration of dissolved oxygen. At the hearing in Virden in 1977, strong complaints were heard from downstream residents on Gopher Creek arising from the unsatisfactory discharges prior to the completion of the new plant. In the control order issued by the

Commission at the end of 1977, a requirement was the construction of a pipeline to carry the plant effluent past the downstream portion of Gopher Creek directly to the Assiniboine River. The order was appealed by the Town due to the expense foreseen in this pipeline requirement and this portion of the order was stayed by the Minister.

After the Department of Environment and Workplace Safety and Health had completed an extensive study of the conditions in the Creek, following the installation of the new plant, the Minister requested the Commission to conduct a new hearing to resolve the outstanding issues and issue a new order. Evidence received at the October, 1986, hearing held in Virden revealed that, following the installation of the sewage treatment plant the conditions in Gopher Creek had greatly improved, especially with respect to concentrations of non-filterable residues, organic substances and bacteria. A continued concern about the quality of water in the Creek and its suitability for watering livestock was received from a downstream property owner. The Commission's new control order retained the limits and controls on the discharge of sewage effluent and, deleted the pipeline requirement after consideration of water quality evidence and argument from the Environment Division.

City of Thompson, Sewage Treatment Plant

In another resolution of a matter which was appealed a number of years ago, the Minister directed the Commission, in September, 1985, to hold a new hearing and issue a new control order for the City of Thompson sewage treatment plant. The Commission first dealt with this operation in 1976 and issued an order calling for the submission of a design plan for the construction of a new secondary treatment facility. The City appealed the order and the provision requiring this design plan was stayed. Following receipt of the Minister's direction for a new hearing, the City requested time to complete a full year of testing and study to determine the efficiency levels of the existing plant operation and review options for any improvement required. The hearing took place September 17, 1986 after the City's report and an environmental report had been received. The Commission was advised by the City that the plant was being efficiently operated and was functioning in accordance with design performance criteria. The Environmental Management Division of the Environmental Department recommended adoption of sewage effluent quality control standards that were compatible with the plant's performance capabilities. It was pointed out that the effluent concerned would have no significant impact on the Burntwood River, in part because the rate of flow had been increased tenfold by the Churchill diversion project since the previous order had been issued. Acceptance of the Division's recommendations was endorsed by the City's representatives and the Commission's new control order, which was issued November 3, 1986, contained limits, terms and conditions based on these recommendations.

Town of Steinbach, Sewage Lagoon System

Since the late 1950's the Town of Steinbach took care of its wastewater treatment needs by the use of a multi-cell sewage lagoon system located north of the Town. This system operated effectively over the years. However, in recent times, with the Town expanding toward and beyond the lagoons and with the hydraulic loadings increasing due to higher water consumption to support a modern lifestyle, the size limitations of the system made it necessary to expand. Finally, a proposal was filed 1984, for a new system to be located about four kilometres northwest of Steinbach. When this proposal was advertised by the Commission in June, 1985 a letter was received from a local resident pointing out that the site chosen for the lagoon system was subject to water seepage from unusual artesian well activity. Additional investigations were undertaken and considerable redesign of the project was done. On receipt of the environmental department's report on the redesigned project, the Commission held a public hearing in Steinbach on August 19, 1986 and issued its control order October 27, 1986. The order set limits and conditions on emissions to the environment and specified the direction of effluent discharge to the Manning Channel drain, to ensure the effluent was directed away from nearby residences. This is an interesting example where prompt and informed citizen participation, after publicity given to a project by the Commission's procedures, led to the technical modification of the design as a result of information that came to light by this means.

Village of Glenboro, Sewage Lagoon System

In August of 1986 the Commission reviewed its 1984 order issued for the operation of the expanded village sewage lagoon system completed at that time. The reason for this review was the unusual method of operation of the system, relying on the seepage of liquid into the sandy soil prevalent in the area, rather than having it drain away, following treatment, into a river or stream. The so called 'seepage lagoon' was placed in service in the 1950's and functioned as designed. When the time came, in 1984, for the expansion of the system, a new, impermeable primary cell was added to expand treatment and storage capability. However, when consideration was given to a proposal to make the entire system impermeable and have the effluent discharge into a water body, it was pointed out that the ditches in the area were also highly permeable and the discharge would be ab-

sorbed into the ground within a short distance of the release point. In the 1986 review, the Commission was advised by experts that there was a danger the seepage would eventually contaminate the shallow sand acquifer on which the people of Glenboro depended for their supply of well water. Extensive testing, as required by the previous control order issued by the Commission, confirmed that this anticipated contamination had not occurred to date. The varied control order, issued by the Commission following the hearing to review this matter, called for continued monitoring and vigilance to provide early warning of any spread of contamination and for a further review of the matter to be conducted in 1988. It also provided that the use of the infiltration cell would have to be discontinued within one year of the occurrence of a higher than specified level of the indicator contaminant, nitrate, in the test wells being monitored.

Village of Hamiota, Sewage Treatment Lagoon

During the current fiscal year the lagoon system serving the Village of Hamiota came to the Commission's attention, as it had many times since the Commission's first control order was issued for this operation. Hamiota had the bad luck to be served, for the purposes of sewage effluent discharge, by an intermittent watercourse that meandered through the lands of a considerable number of agricultural producers. As this stream or swale was not well defined, many landowners simply ploughed up the depression and planted crops in it. This led to problems when the Village wished to discharge the contents of its sewage treatment system. Discharge of sewage lagoons normally takes place in May-June and September-October. However, these discharge periods coincided with the seasons of most intense field work on the farms affected by the discharges. Several million litres of water, released to flow down the swale during planting or seedbed preparation in spring — or at harvest time in the fall — aroused resentment on the part of the farmers. This situation lead the Commission to prescribe restrictions limiting effluent discharges to the month of October, only, in its 1979 control order. The capacity of the system proved incapable of containing an entire year's wastewater and in 1980 the Village requested, and, in 1981 the Commission approved the use of the effluent to irrigate the Hamiota Golf Course. However, for a number of reasons, including the stringent conditions prescribed by the Commission, this option proved impractical for the Golf Club which sunk its own well to provide irrigation water. The result was that, in each of the following years it was necessary for the Village Council to seek special emergency permission to discharge the effluent in spring. Notwithstanding the restriction in the order, and, owing to the pressing nature of the problem, the Commission and, later, the Environmental Management Division granted permission for early spring discharges. Finally, in 1985, a proposal to expand the lagoon system was submitted and, in April, 1986, the Commission issued its new control order for the proposed expanded system. It was expected the construction of the expansion would be carried out in the following fiscal year, depending on the availability of funding; however, the Village had to submit yet another request for emergency discharge permission in January, 1987 and this permission was also granted in light of the efforts being made by all concerned to find a way of overcoming the problems of the lagoon system.

Other Wastewater Treatment Systems

In addition to those already mentioned, control orders were issued for new municipal sewage lagoons in Fisher Branch, where the Commission held a hearing in July to hear local concerns before issuing its order, and the unincorporated village district Laurier, where the Rural Municipality of Ste Rose du Lac applied for and were granted a control order for the new lagoon.

A hearing was also held in Elie for the James Valley Colony who had filed a proposal to divert some of their lagoon effluent, from its previous use for land irrigation, to the Scott Coulee Drain and the LaSalle River. The effluent had proven marginal for irrigation because of its saline mineral content. The Reeve and Council of the Rural Municipality of Macdonald appeared at the hearing to stress their view that the LaSalle River water should be reserved, to the extent possible, for alternative uses and rehabilitated in quality to a point where it would be a suitable source when water supply plans are developed in future for Sanford and other communities in the Municipality.

Sewage lagoon projects were also reviewed for operations not sponsored by municipalities. These included a new lagoon system for the Dave Dufour Trailer Park in the Chevrefils settlement in the Local Government District of Alexander, for which a hearing was held in May, 1986, and an order issued. A hearing was also held, in October, 1986 for a new lagoon to serve the Bowes Trailer Park on the trans-Canada highway in the Rural Municipality of Portage la Prairie. The concerns of nearby residents relating to the proposed installation were allayed by the testimony of experts concerning the expected satisfactory performance of the lagoon, and a control order was issued by the Commission in December 1986. As the result of another proposal the Commission also issued a control order relating to a new storage pond built by the Lord Selkirk School Division to serve septic tank effluent from the Happy Thought School in East Selkirk. This facility replaced a previous pond which had not performed satisfactorily in previous years and, as no representations were received from the public, a hearing of the Commission was not necessary.

Orders Suspended

Every sewage treatment facility has a limit to the amount of water that can be stored and satisfactorily treated and a constant concern of municipalities is to provide facilities of appropriate size to handle the increasing needs of their populations. In the case of sewage lagoons, enough capacity is required to retain their contents throughout the winter months until warm spring weather can accomplish the treatment and reduction of contaminants. To ensure time is allowed for this treatment to take place, most of the Commission's control orders do not permit release of effluent until May 15. In the spring of 1986 unusually rainy conditions prevailed and while facilities were designed with some provision for rainfall and other precipitation that enters the system, a considerable number of lagoons became overloaded. Starting in mid-April the Commission heard from the councils of villages, towns and rural municipalities requesting suspension of these discharge limitations because of emergency high water conditions. These requests were reviewed in consultation with municipal representatives and staff of the Environmental Control Services. In most cases it was apparent that if these lagoons were allowed to overflow their earthen dykes, severe structural damage could result and the lagoon effluent would be discharged in this undesirable and costly manner. After these reviews — and after imposing a variety of conditions relating to prerelease effluent disinfection, the study of hydraulic capacity limitations, infiltration seepage problems and expansion plans and public notification requirements — the Commission approved fifteen temporary suspensions. These permitted early discharge of fourteen lagoons in southern Manitoba, including one lagoon that was discharged twice, (see the following table).

Commission Orders Suspended, April-May 1986

Order No.	Municipality
1060	Town of Gladstone
875	Village of Pilot Mound
1001	Rosenort/Rural Municipality of Morris
402	Lundar, Rural Municipality of Coldwell
763	Village of MacGregor
72	Village of Crystal City
511	Wellwood Colony Farm
120	Village of McCreary
497	Eriksdale, Rural Municipality of Eriksdale
898	Minto, Rural Municipality of Whitewater
620	Town of Morden
411	Village of Oakville
91	Village of Gilbert Plains
92	Village of Sandy Lake
91	Village Gilbert Plains

Summary of Orders Issued April 1, 1985 to March 31, 1986

During the 1985/86 fiscal year, the Commission issued thirty-four new or varied orders under the terms of the Clean Environment Act prescribing limits, terms and conditions on the release, discharge or deposit of contaminants to the environment. Details of these orders are given in Appendix "C". The operations for which orders were issued can be classified as follows:

Heavy Industry	2
Medium and Light Industry	5
Mining and Smelting	3
Sewage Treatment	16
Chemical Plants	2
Grain Development and Feed Mills	2
Food Industry	4
	34

Of these orders, 19 dealt with operations in the private sector and 13 covered municipal government facilities, while one was issued to a school division and one to a provincial crown corporation. These orders set limits terms and conditions to control emission of contaminants and the resultant pollution of air, water and land.

State of the Environment

The ecology of the world is under constant and apparently increasing pressure from human activity and development. The fear of mass starvation of the human species by reason of overpopulation has been diminished, at least temporarily, by the "green revolution" and increased food production. As well, in the western and industrialized nations, population growth has slowed but at the same time, there is still rapid population growth in many of the poorer and developing countries of the "third world." In some cases, ill conceived and poorly planned development together with the pressure of population have resulted in the destruction of the environment and its ability to continue the support of the population that is abusing it. A basic deterioration and resulting loss of fertility of large areas has occurred.

The continuing demolition of rain forests combined with an increase in the production of carbon-dioxide on a world-wide scale are causing a serious build-up of carbon-dioxide in the atmosphere. This condition plus the reduction of the ozone layer in the stratosphere, combine to create conditions that many scientists predict will, in the not too distant future, lead to a rise in temperature that will have enormous consequences for everyone.

The contamination of air, water, and soil by both industrial and agricultural practices alike, goes on at a pace that must be checked and reversed for the benefit of future generations and for the salvation of all forms of life in all of the world's ecosystems. Fortunately, there is new hope for a turn around. The concept of a world conservation strategy was developed in the early part of this decade. In 1983 the United Nations established a special commission to investigate environmental concerns and strategies for improvement. This commission, the World Commission on Environment and Development (The Brundtland Commission) met in Canada in May 1986, near the close of its world wide investigation. Its report, which is to be presented in 1987, will focus on environmental problems together with a strategy and recommendations for improvements and solutions to these problems. Following this meeting in Edmonton, the Canadian Council of Resource and Environment Ministers, in October 1986, established the National Task Force on Environment and Economy with a mandate to develop a Canadian strategy for sustainable economic development. This Task Force was chaired by the Honourable Gerard Lecuyer and is to report on its deliberations in 1987.

During the year under review the federal government proposed a new environment act and initiated public discussion and comment on the draft bill. The draft of the new Canadian Environmental Protection Act contains measures to ensure proper management and control of toxic chemicals including assessment to new chemicals, prior to their introduction, and the possible recall of some chemicals. The establishment of guidelines and objectives for the protection of the environment is proposed and higher penalties for non-compliance are included.

The Manitoba Government also developed a new act to replace the Clean Environment Act, which has served as Manitoba's environmental legislation since 1968, with a number of amendments over the intervening years. Following the preparation of a discussion paper on the proposed new Environment Act, there were public meetings to review the paper with interested persons and organizations. A draft of the proposed new Act was tabled in the Legislature and was circulated to all interested parties for further discussion and comment prior to the presentation in the Legislative Assembly of a bill to enact the new legislation.

The proposed new Environment Act broadens the scope of environmental consideration beyond the essentially pollution control aspects of the existing Clean Environment Act. Environmental impact assessments are proposed for a wide range of undertakings and penalties for violation are to be raised substantially.

Public participation will continue to be stressed in the new Act. The role of the Clean Environment Commission will change, to some extent, including the requirement under the present act for the Commission to review the state of the environment as a part of its annual report. After the new Act comes into force the Environment Department will be given this task on a bi-annual basis. The Commission, with its small staff, has never been able to produce a comprehensive report with sufficient data to establish trends and comparative analyses of year-to-year conditions; however, the Department's resources should result in a much more comprehensive document. In the meantime the Commission will continue to report its comments on aspects of the environment that have come to its attention during the year.

Air

Power Generation

On April 26, 1986, a nuclear reactor in a power generating station at Chernobyl in the U.S.S.R. was badly damaged by steam and chemical explosions. The damage and subsequent fires resulted in the release of airborne radioactive emission that spewed over Northeastern Europe and gradually worked its way around the world. There was almost a month of frantic activity before all aspects of the accident were under full control. Thirty-one people were killed and over two hundred suffered varying degrees of radioactive burns and sickness. Approximately one hundred and

thirty-five thousand people were evacuated from their communities and homes near the reactor location. Serious radioactive fallout occurred in Norway and Sweden, resulting in the destruction of reindeer herds, which provide a regular part of the Nordic food supply. Vegetable crops in large areas of Northern Europe had to be destroyed

While the main cause of the calamity appears to have been human error in the operation of the plant, and though weakness in design features of the plant have been identified, this accident serves as a stern warning of the possible consequence of malfunction or operational accidents at nuclear power generating plants.

In a still power hungry world the current choice is between nuclear generated power: the utilization of non-renewable fossil fuels, with such undesirable by-products as acid rain; or relatively clean power from hydro-electric generating plants. However, although the plants generating power from hydro sources produce relatively few undesirable environmental results, as direct by-products of the actual power generating process, the harnessing of the necessary water supply in forebays behind dams often has serious and widespread implications for the natural environment, which demand thorough study and careful consideration prior to the undertaking of new developments. The ecological changes and damage caused by hydro projects in some parts of the world have called into question the basic wisdom of those undertakings. The question of power production — how and how much — poses difficult choices indeed.

Lead

On January 1, 1987 the Federal Government reduced the allowable lead content of regular gasoline from 0.77 grams per litre to a level of 0.29 grams per litre. While this is a substantial reduction, the allowable level is still considerably higher than that permitted in the United States. Another substantial decrease has been targetted, but not until 1992.

Leaded gasoline prices at the pump continue to undercut the price of unleaded gasoline, although action by the Manitoba Government has reduced the price differential. The practice of nozzle switching at retail gasoline outlets to allow leaded gasoline to be dispensed into vehicles designed for unleaded gasoline continues in some outlets in Winnipeg as well as rural Manitoba. An equalization of the price of leaded vs. unleaded gasoline or a premium on leaded gasoline should be considered, as this would likely stop this abuse.

Sulphur Dioxide

In December, 1986, the Minister requested the Commission to hold public hearings to review the draft of a regulation under the Clean Environment Act, which will control air emissions from the operations of The Hudson Bay Mining and Smelting Co. Limited at Flin Flon and Inco Limited in Thompson. The regulation will limit the emission of particulate matter as well as sulphur dioxide. The smelters at Flin Flon and Thompson are major sources of sulphur dioxide emissions. The emission of sulphur dioxide to the atmosphere has been identified as one of the most significant contributors to the fall-out of acid precipitation, which has been named one of the most serious environmental problems in the world today. Hundreds of lakes have been made sterile from the effects of acid precipitation and thousands more are threatened throughout widespread areas of the world.

Manitoba had earlier signed a Federal-Provincial accord whereby the provinces east of the Manitoba-Saskatchewan border agreed to reduce total sulphur dioxide emissions by fifty percent by 1994. As part of this accord Manitoba agreed to limit sulphur dioxide emission from a 1980 base of 738 kilotonnes per year to an annual level of 550 kilotonnes by 1994. The overall Canadian goal is designed to arrive at a wet sulphate deposition level not greater than 20 kilograms per hectare per year, which will provide adequate protection for moderately sensitive areas.

Public hearings were scheduled for Flin Flon, Thompson and Winnipeg early in the 1987/88 fiscal year. When the new regulation comes into force, it will replace the Clean Environment Commission orders which have regulated these operations for many years.

Even with the Canadian reductions of sulphur dioxide emissions that are now planned, some regions of Canada will not be adequately protected from the disastrous effects of "acid rain" without substantial cut-backs of sulphur dioxide emissions in the United States. Because of prevailing wind patterns emissions from industries located in the eastern and midwestern regions of the U.S.A. have a great impact on the sensitive and badly damaged areas of eastern Canada.

Despite continued strong Canadian initiatives for a Canada-U.S.A. agreement to achieve a joint reduction of emissions — and even with Canada's unilateral action — their was frustratingly little accomplished in the way of any concrete progress towards the signing of an agreement and the actual or planned reduction of emissions from United States sources.

Water

Garrison Diversion

The passage of the Garrison Diversion Reformulation Act of 1986 by the United States Congress changed the Garrison Diversion Project to the extent that the threat of the introduction of Missouri River water into the Red River watershed has been effectively removed. This Act stipulated that a canal (The Sykston Canal) be constructed to replace the controversial Lone Tree Reservoir. This canal will direct all irrigation water drainage back to the Missouri watershed, thus ensuring that there will be no transfer of water and aquatic life from the Missouri into the Red River Basin. The only Missouri River water that may now be discharged into Red River watershed would be a relatively small amount of treated municipal or industrial waste water, the treatment of which will have removed all possibility of the survival of aquatic biota or other living organisms. The opposition organized by Manitoba and sustained over a period of several years has been a very important factor in the prevention of the transfer of this water with the possibility of far reaching and irreversible environmental consequences.

Shoal Lake

Hearings by the Federal Government to review a proposal by the Shoal Lake Indian Band No. 40 for the development of a recreational home subdivision on the shore of Shoal Lake near the intake of the City of Winnipeg water supply have still not been held. Concerns over this possibility have not been put to rest. Purchase of land from the Indian Band by the City is one final solution that is under consideration.

Nuclear Waste

Early in the fiscal year under review, the United States government decided to discontinue its plan to select a second underground repository for the permanent disposal of nuclear waste. The second national disposal site had been proposed to be located underground in a crystalline granite rock formation. Eight of the twenty sites initially selected as having high potential for development were in Minnesota with four of these located in the Red River watershed. There was immediate intensive and united opposition by Manitoba, Minnesota and North Dakota and this concentrated opposition by heads of government and citizen organizations alike was undoubtedly a powerful influence in the decision to cancel the planned development.

Hazardous Waste

In September, the Honourable Gerard Lecuyer directed the commission to hold a second series of public hearings throughout Manitoba as a part of the completion of Phase I of Manitoba's Hazardous and Special Waste Program. The Minister emphasized the importance of public consultation and involvement in the successful implementation of the hazardous waste management program and provided the following specific terms of reference.

1. Based on the Department's report outlining the specific hazardous and special waste situation in Manitoba, the government's action plan, an appraisal of present treatments and capabilities, current technology available, Hazardous Waste Management Cost analysis Report and options for implementing a comprehensive waste management system, the Commission shall solicit public opinion and involvement and provide government with recommendations for a preferred system option.
2. In conjunction with the determination of a preferred option, the Commission shall provide the government with recommendations on an effective mechanism for public input and involvement in the process to select whatever sites might be required as part of the management system, and recommendations as to ongoing public involvement relative to the actual operation of the eventual system.
3. The Commission shall solicit public input and provide the government with recommendations on candidate site selection criteria. The criteria should address public concerns with respect to the siting of a facility or components of facilities which might be required in a waste management system, including transportation, socio-economic and other related concerns.

Following radio and newspaper advertisement, a press conference, and extensive distribution of mailed information, hearings commenced in Arborg on November 12, 1986 and finished on January 20, 1987 in Portage la Prairie. A total of fourteen hearings were held in eleven regional centres as follows: Arborg, Brandon (2), Dauphin (2), Flin Flon. Swan River, The Pas, Thompson, Portage la Prairie, and Winnipeg (2).

At each hearing a brief was presented by departmental staff providing background information and addressing the questions under consideration. This brief utilized the Department's 1985 report entitled "Hazardous Waste Management In Manitoba" which gave a very preliminary estimate by region of the hazardous waste produced in Manitoba, discussed a variety of possible treatment and disposal possibilities and discussed a number of management system alternatives. This report had earlier been distributed as general information leading up to the hearings. Also addressed in the departmental brief was a consultants (IDS/Monenco) analysis of the various options projecting capital and operating costs over a 20 year period.

The hearings were well attended and a large number of written and verbal briefs were presented.

The Commission's report, addressing the terms of reference and a number of other concerns, received by the Commission during the course of the hearings, was completed in May.

During 1986, the Manitoba Hazardous Waste Management Corporation Act was passed establishing a crown corporation for this purpose and, early in 1986, Mr. Nick Carter was appointed chairperson of the board of directors for the corporation, followed by the appointment of a board of directors.

The Commission's report marks the end of Phase I of the implementation of Manitoba's hazardous waste management system. Phase II of the program will include final determination of all of the components of the system and the selection of sites, for the facilities. Actual implementation of the system will take place in Phase III.

The full implementation of this program will be a giant step towards the protection and improvement of Manitoba's environment, particularly with regard to the improvement or elimination of the present methods of disposal of some hazardous wastes in regular landfills and by discharge to municipal sewage systems.

Appendix A

Regulations Under The Clean Environment Act

1973 February 13, 1973 — Manitoba Regulation 34/73, as amended by M.R. 6/76, respecting Livestock Production Operations. Any person operating or intending to operate a livestock production operation is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act. Operators of livestock production operations falling into certain environmental categories as specified by the Regulation must register the operations with the Department.

1974 December 31, 1974 — Manitoba Regulation 334/74, respecting Incinerators. Any person intending to construct or operate a new incinerator is not required to file a proposal as provided for in subsection 14(1) of The Clean Environment Act but that person must register the incinerator with the Department.

1975 June 15, 1975 — Manitoba Regulation 120/75, respecting Liquid Effluent Discharges from Pulp and Paper Mills. Any person operating or intending to operate a pulp and paper mill is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act with respect to liquid effluent discharges from the mill but that person must meet the requirements of the Federal Fisheries Act.

1976 January 26, 1976 — Manitoba Regulation 18/76, respecting the Disposal of Whey. Any person discharging or disposing of whey from a dairy manufacturing plant is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act with respect to liquid effluent discharges from the dairy; however, no person is to dispose of whey into the environment other than by an acceptable method as prescribed by the regulation.

1976 September 20, 1976 — Manitoba Regulation 208/76, respecting Waste Disposal Grounds. Any person operating or intending to operate a waste disposal ground is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act but must register the proposal with the Department and meet the requirements as specified by the Regulation.

1977 July 13, 1977 — Manitoba Regulation 140/77, respecting Discharges to the Air from Secondary Lead Smelters. Any person operating or intending to operate a secondary lead smelter is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act with respect to emissions of particulate matter and lead particulate matter from the smelter. Secondary lead smelters are subject to Regulations under the Federal Clean Air Act.

1977 July 19, 1977 — Manitoba Regulation 145/77, whereby the Minister declared portions of lands in the Local Government District of Fisher as a Critical Area for the purposes of Manitoba Regulation 156/80.

1978 June 26, 1978 — Manitoba Regulation 115/78, whereby the Minister declared portions of lands in the Rural Municipality of Victoria as a Critical Area for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1979 October 17, 1979 — Manitoba Regulation 202/79, whereby the Minister declared portions of lands in the Rural Municipality of Ritchot as Residential Areas for the purposes of the Livestock Production Operations Regulation.

1980 June 27, 1980 — Manitoba Regulation 112/80, respecting Campgrounds.

1980 September 3, 1980 — Manitoba Regulation 156/80, respecting the Storage and Handling of Gasoline and Associated Products. Any person operating or intending to operate a storage tank system is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act. In the Regulation, no person shall construct or operate a storage tank system without completing and filing a departmental form. No person shall operate an existing tank system without registering the system. No person shall alter an existing storage tank system without registering the plans with the Department. This regulation repeals Manitoba Regulations 148/76, 42/77, and 246/77.

1980 September 16, 1980 — Manitoba Regulation 165/80, respecting The City of Winnipeg Amy Street Heating Plant located at 21 Amy Street, Winnipeg, Manitoba. This regulation postponed to September 1, 1985, the imposition of the stated air pollution control limits.

1981 January 7, 1981 — Manitoba Regulation 15/81, respecting the designation of certain substances as Hazardous Materials.

Regulations Under The Clean Environment Act (Cont'd)

1981 March 27, 1981 — Manitoba Regulation 85/81, respecting Private Sewage Disposal Systems and Privies. Any person operating or intending to operate a private sewage disposal system with a sewage flow of less than 14,000 litres of sewage per day is not required to file a proposal or register as provided for in subsections 14(1) and 14(4) of The Clean Environment Act. Private sewage disposal systems must be registered with the Department and meet the requirements of the Regulation. This regulation repeals Manitoba Regulation 242/76.

1984 May 30, 1984 — Manitoba Regulation 119/84, whereby the minister designated portions of the Province as sensitive areas for the purposes of Manitoba Regulation 85/81.

1984 May 30, 1984 — Manitoba Regulation 120/84, whereby the minister designated portions of the Province as sensitive areas for the purposes of Manitoba Regulation 85/81.

1984 June 1, 1984 — Manitoba Regulation 124/84, respecting Litter. Manitoba Regulation 259/74 is repealed.

1985 April 24, 1985 — Manitoba Regulation 98/85, respecting Pesticides. Any person intending to apply pesticides is not required to file a proposal as provided for in subsection 14(1) of The Clean Environment Act provided the person meets the requirements of this regulation. Manitoba Regulations 156/74, 161/75, 26/78, 118/79 and 174/75 are repealed.

1985 August 27, 1985 — Manitoba Regulation 183/85, whereby the Minister declared portions of lands in the Rural Municipality of East St. Paul as a Critical Area for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1985 August 27, 1985 — Manitoba Regulation 184/85, whereby the minister designated portions of the Town of Neepawa sensitive areas for the purposes of the Storage and Handling of Gasoline and Associated Products Regulation.

1985 October 9, 1985 — Manitoba Regulation 219/85, respecting The City of Winnipeg Amy Street Heating Plant located at 21 Amy Street, Winnipeg, Manitoba. This regulation postponed to September 1, 1990, the imposition of the stated air pollution control limits.

Appendix B

Public Hearings — 1986

Hearing Number	Date	Subject	Location
H-06-86	86/04/17	Friendly Family Farms Ltd. to consider the continued operation of a chicken processing plant located on Lot 3, Plan 4790, Roll No. 2-319-200-06, in Section 10, Township 7, Range 6 EPM in the Town of Steinbach, with discharge of effluent from a wastewater lagoon via a ditch to the Manning Canal.	Steinbach
H-01-86	86/04/09	City of Portage la Prairie in connection with the operation of a sewage treatment plant and an aerated sewage lagoon system located on River Lot 108 in Portage la Prairie Parish in the City of Portage la Prairie, Manitoba, with discharge of effluent to the Assiniboine River.	Portage la Prairie
H-02-86	86/04/28	Simplot Chemical Company Ltd., at the direction of the Minister, to consider an extension of the irrigation season for liquid effluent disposal to farm land from a chemical manufacturing plant complex located in the SW 1/4 of Section 18, Township 10, Range 18 WPM in the City of Brandon, Manitoba, and to consider re-scinding Order No. 1032.	Brandon
H-03-86	86/05/22	Mr. Dave Dufour in connection with the operation of a sewage lagoon located on Lot 45, Township 18, Range 10 EPM in the Local Government District of Alexander, Manitoba, serving a trailer court, with discharge of effluent via local drainage toward the Winnipeg River.	St. Georges
H-04-86	86/06/05	SherrGold Inc., in connection with the operation of a gold mine located in Township 91, Range 22 WPM Claim J.R. Lot 1718, Group Plan 571 in the Granville Mining Division in The Pas Mining District in northern Manitoba, with discharge of minewater and sewage plant effluent via a surface polishing pond and a marshy area to the Keewatin River.	Lynn Lake
H-05-86	86/06/11	Hudson Bay Mining and Smelting Co., Limited, in connection with the continued operation of a copper-zinc mining and smelting complex located in the E 1/2 of Section 1, Township 67, Range 30 WPM in the Province of Saskatchewan and in the W 1/2 of Section 6, Township 67, Range 29, near the City of Flin Flon in the Province of Manitoba, with discharge of tailings and liquid effluent into the Flin Flon Lake tailings area and with effluent drainage via Flin Flon Creek to Ross Lake, Ross Creek, and Schist Lake.	Flin Flon
H-06-86	86/07/2&3	The Town of Neepawa in connection with the operation of a wastewater treatment facility, located in the SW 1/4 of Section 35, Township 14, Range 15 WPM in the Rural Municipality of Langford, Manitoba, to treat wastewater from the Springhill Farms Ltd. abattoir, with discharge of effluent via a pipeline to the Whitemud River.	Neepawa
H-07-86	86/07/17	McCain Foods Limited in connection with the operation of a potato processing plant located on Lot 1 on Ninth Avenue in the Industrial Park in the City of Portage la Prairie, Manitoba.	Portage la Prairie
H-08-86	86/07/22	The Village of Glenboro in connection with the operation of an expanded and upgraded sewage lagoon system located in the NW 1/4 of Section 10, Township 7, Range 14 WPM in the Village of Glenboro, Manitoba, with percolation of treated wastewater into the soil from the secondary cell of the system.	Glenboro

Public Hearings — 1986 (Cont'd)

Hearing Number	Date	Subject	Location
H-09-86	86/07/24	The Manitoba Water Services Board in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 19, Township 24, Range 1 WPM in the Local Government District of Fisher, Manitoba serving the Unincorporated Village District of Fisher Branch, with discharge of effluent via the Broad Valley Drain to the East Branch of the Fisher River.	Fisher Branch
H-10-86	86/08/19	James Valley Colony Farms Ltd. in connection with the diversion of effluent from the operation of a sewage lagoon system located in the NE 1/4 of Section 14, Township 10, Range 3 WPM in the Rural Municipality of Cartier, Manitoba, from farmland irrigation to the Scott Coulee drain and discharge to the LaSalle River.	Elie
H-11-86	86/08/27	The Town of Steinbach in connection with the operation of a new aerated sewage lagoon system located in part of Section 8, Township 7, Range 6 EPM in the Rural Municipality of Hanover, Manitoba, with discharge of effluent via drainage located northeast of the lagoon cells to the Upper Manning Canal.	Steinbach
H-01-86	86/09/03	The City of Portage la Prairie in connection with the operation of a sewage treatment plant and an aerated sewage lagoon system located on River Lot 108 in Portage la Prairie Parish in the City of Portage la Prairie, Manitoba, with discharge of effluent to the Assiniboine River.	Portage la Prairie
H-12-86	86/09/17	The City of Thompson in connection with the operation of a sewage treatment plant located at the northerly end of Nelson Road between Yale Avenue and the Burntwood River in the City of Thompson, Manitoba, with discharge of effluent to the Burntwood River.	Thompson
H-13-86	86/09/24	Swan Valley Consumers Cooperative Limited in connection with the operation of an incinerator located on the Applicant's premises at or near 811 Main Street in the Town of Swan River, Manitoba.	Swan River
H-14-86	86/10/21	Bowes Trailer Park in connection with the operation of a sewage lagoon system located on part of River Lots 32 and 33 in the High Bluff Parish, serving the Bowes Trailer Park, with discharge of effluent to irrigate agricultural land owned or legally controlled by the applicant, located in the same River Lots, in the Rural Municipality of Portage la Prairie, Manitoba.	Portage la Prairie
H-15-86	86/10/28	The Town of Virden in connection with the operation of a sewage treatment plant located on Lots 12 and 13, Block 170, Plan 197 BLTO in the Town of Virden, Manitoba, with continuous discharge of effluent via Gopher Creek to the Assiniboine River.	Virden
H-16-86	86/10/28	The Canadian Occidental Petroleum Ltd. in connection with the operation of a chemical plant for the manufacture of sodium chlorate located in parts of the NE 1/4 and SE 1/4 of Section 10, the SW 1/4 of Section 14 and the SE 1/4 of Section 15 in Township 10, Range 18 WPM in the City of Brandon, Manitoba.	Brandon
H-01-86	86/11/07	The City of Portage la Prairie in connection with the operation of a sewage treatment plant and an aerated sewage lagoon system located on River Lot 108 in Portage la Prairie Parish in the City of Portage la Prairie, Manitoba, with discharge of effluent to the Assiniboine River.	Portage la Prairie

Public Hearings — 1986 (Cont'd)

Hearing Number	Date	Subject	Location
H-17-86	86/11/12	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Arborg
H-18-86	86/11/17	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Beausejour
H-19-86	86/11/19	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Winnipeg
H-20-86	86/11/24	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Dauphin
H-21-86	86/11/25	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Brandon
H-22-86	86/12/01	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Flin Flon
H-23-86	86/12/02	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	The Pas

Public Hearings — 1986 (Cont'd)

Hearing Number	Date	Subject	Location
H-24-86	86/12/08	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Thompson
H-25-86	86/12/10	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Morden
H-26-86	86/12/15	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Winnipeg
H-27-86	86/12/16	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Swan River
H-28-86	87/01/12	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Dauphin
H-29-86	87/01/13	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Brandon
H-30-87	87/01/20	Hazardous Waste Management Program in Manitoba, Phase II, Part 2 of a series of informational hearings to receive evidence and encourage public participation in the development of site selection and operational capability criteria for a hazardous waste management system for the Province, following which the Commission was expected to submit a report and recommendations to the Minister responsible under the Clean Environment Act.	Portage la Prairie

Public Hearings — 1986 (Cont'd)

Hearing Number	Date	Subject	Location
H-31-87	87/03/30	Granges Exploration Ltd./Albermin Corporation in connection with the operation of the Tartan Lake Mine complex, including a gold mine, mill, refinery, sewage treatment plant and ancillary facilities, located in the East Half of Section 1, Township 68, Range 29 WPM and Sections 5 and 6 of Township 68, Range 28 WPM in Manitoba with discharge of tailings solids and wastewater to a tailings disposal area southeast of the mine and with discharge of liquid effluent from the tailings disposal area to Tartan Lake.	Flin Flon

Appendix C

1. Orders Resulting From Applications

1. Order No. 1090 — Issued to the Village of Hamiota in connection with the operation of a sewage lagoon system located on Parcels A, B, C, and D, Plan 4819, in the SW 1/4 of Section 8, Township 14, Range 23, WPM, in the Rural Municipality of Hamiota serving the Village with discharge of effluent via a drainage channel to a natural watercourse. — April 22
2. Order No. 1091 — Issued to Alfa Mills Ltd. in connection with the operation of a cubed alfalfa feed manufacturing plant located at or near 175 — 1st Avenue, N.W., in the Town of Minnedosa, Manitoba. — April 30
3. Order No. 1092 — Issued to Manitoba Pool Elevators in connection with the continued operation of a grain elevator located on the Canadian National Railways right-of-way in the Town of Morris, Manitoba. — April 22
4. Order No. 1093 — Issued to the Reliance Products Ltd. in connection with the operation of a plastic container manufacturing plant located on part of Lots 4 and 5, Plan 6783 WLTO in the Parish of St. James, at or near 1093 Sherwin Road in the City of Winnipeg, Manitoba. — May 30
5. Order No. 1094 — Issued to the Rural Municipality of Ste. Rose Du Lac in connection with the operation of a sewage lagoon system located in the NW 1/4 of Section 18, Township 22, Range 15 WPM in the Rural Municipality, serving the unincorporated village district of Laurier, Manitoba with discharge of effluent via an intermittent creek to the Turtle River. — July 10
6. Order No. 1095 — Rural Municipality of Coldwell in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 2, Township 20, Range 5 WPM in the said Rural Municipality, serving the unincorporated village of Lundar with discharge of effluent via a road ditch and the Burnt Lake Drain to Swan Lake. (The Order was withdrawn when the proposed SLS Expansion cell was not constructed in 1986). — July 10
7. Order No. 1096 — Issued to Mr. Dave Dufour in connection with the continued operation of a sewage lagoon located on Lot 45, Township 18, Range 10 EPM in the Local Government District of Alexander, Manitoba, serving a trailer court, with discharge of effluent via local drainage toward the Winnipeg River. — July 10
8. Order No. 1097 — Issued to Friendly Family Farms Ltd., in connection with the continued operation of a wastewater lagoon system serving a chicken processing plant located on Lot 3, Plan 4790, Roll No. 2-319-200-06, in Section 10, Township 7, Range 6 EPM in the Town of Steinbach, with discharge of effluent via a ditch to the Manning Canal. — July 17
9. Order No. 1098 — Issued to SherrGold Inc., in connection with the operation of a gold mine located in Township 91, Range 22 WPM Claim J.R. Lot 1718, Group Plan 571 in the Granville Mining Division in The Pas Mining District in northern Manitoba, with discharge of minewater and sewage plant effluent via a surface polishing pond and a marshy area to the Keewatin River. — July 22
10. Order No. 1099 — Issued to Canadian Publishers Company Limited in connection with the continued operation of a publishing plant located at or near 55 Dunlop Avenue in the City of Winnipeg, Manitoba. — July 17
11. Order No. 1100 — Issued to The Manitoba Water Services Board in connection with the operation of a sewage lagoon system located in the SW 1/4 of Section 19, Township 24, Range 1 WPM in the Local Government District of Fisher, Manitoba serving the Unincorporated Village District of Fisher Branch, with discharge of effluent via the Broad Valley Drain to the East Branch of the Fisher River. — July 29

1. Orders Resulting From Applications (Cont'd)

12.	Order No. 1101 — Issued to SherrGold Inc., in connection with the operation of a mill for the processing of gold-bearing ore by a cyanidization process, located in Township 90, Range 23 WPM Lease No. M2215 to 2539, inclusive, Lot 63, Group Plan 751 in or near the Local Government District of Lynn Lake, Manitoba, with discharge of tailings material to the Farley open pit at Lynn Lake and with discharge of Liquid effluent via the tailings discharge area and the abandoned underground workings of the Farley mine to the Lynn River.	July 29
13.	Order No. 1102 — Issued to Springhill Farms Ltd. in connection with the operation of a hog abattoir located in the SW 1/4 of Section 35, Township 14, Range 15 WPM in the Rural Municipality of Langford, Manitoba.	July 29
14.	Order No. 1103 — Issued to the Town of Neepawa in connection with the operation of a wastewater treatment facility, located in the SW 1/4 of Section 35, Township 14, Range 15 WPM in the Rural Municipality of Langford, Manitoba, to treat wastewater from the Springhill Farms Ltd. abattoir, with discharge of effluent via a pipeline to the Whitemud River.	July 29
15.	Order No. 1104 — Issued to McCain Foods Limited in connection with the operation of a potato processing plant located on Lot 1 on Ninth Avenue in the Industrial Park in the City of Portage la Prairie, Manitoba.	September 26
16.	Order No. 1105 — Issued to the Town of Steinbach in connection with the operation of an aerated sewage lagoon system located in part of Section 8, Township 7, Range 6 EPM in the Rural Municipality of Hanover, Manitoba, with discharge of effluent via drainage located northeast of the lagoon cells to the Upper Manning Canal.	October 27
17.	Order No. 1106 — Issued to James Valley Colony Farms Ltd. in connection with the operation of a sewage lagoon system located in the NE 1/4 of Section 14, Township 10, Range 3 WPM in the Rural Municipality of Cartier, Manitoba with discharge of effluent to cropland controlled by the Colony or, alternatively via the Scott Coulee Drain to the LaSalle River.	October 31
18.	Order No. 1107 — Issued to the City of Thompson in connection with the operation of a sewage treatment plant located at the northerly end of Nelson Road between Yale Avenue and the Burntwood River in the City of Thompson, Manitoba, with discharge of effluent to the Burntwood River.	November 3
19.	Order No. 1108 — Issued to Swan Valley Consumers Cooperative Limited in connection with the operation of an incinerator located on the Applicant's premises at or near 811 Main Street in the Town of Swan River, Manitoba.	October 27
20.	Order No. 1109 — Issued to Mr. Keith Bowes, in connection with the operation of a sewage lagoon system located on part of River Lots 32 and 33 in the High Bluff Parish, serving the Bowes Trailer Park, with discharge of effluent to irrigate agricultural land owned or legally controlled by the applicant, located in the same River Lots, in the Rural Municipality of Portage la Prairie, Manitoba.	December 19
21.	Order No. 1110 — Issued to the Town of Virden, in connection with the operation of a sewage treatment plant located on Lots 12 and 13, Block 170, Plan 197 BLTO in the Town of Virden, Manitoba, with continuous discharge of effluent via Gopher Creek to the Assiniboine River.	December 19
22.	Order No. 1111 — Issued to Canadian Occidental Petroleum Ltd. in connection with the operation of a chemical plant for the manufacture of sodium chlorate located in parts of the NE 1/4 and SE 1/4 of Section 10, the SW 1/4 of Section 14 and the SE 1/4 of Section 15 in Township 10, Range 18 WPM in the City of Brandon, Manitoba.	December 19

1. Orders Resulting From Applications (Cont'd)

23. Order No. 1112 — Issued to the Lord Selkirk School Division No. 11, in connection with the operation of a sewage treatment plant and effluent storage pond located on Parcel A of River Lot 74, Plan No. 9483, in the Parish of St. Clements, in the Rural Municipality of St. Clements, Manitoba, serving the Happy Thought School, with effluent drainage to Cooks Creek. — January 23

24. Order No. 1113 — Issued to the Public Press in connection with the continued operation of a printing plant located at or near 1760 Ellice Avenue in the City of Winnipeg, Manitoba. — February 17

25. Order No. 1114 — Issued to L.G.M. Graphics Inc., in connection with the continued operation of a printing plant located at or near 737 Moray Street in the City of Winnipeg, Manitoba. — February 17

26. Order No. 1115 — Issued to Duha Printers (Western) Limited in connection with the operation of a plant for the production of lacquered display materials and plastic covered stationery binders, the said plant being located at or near 609 Greenwood Avenue in the Town of Selkirk, Manitoba. — March 19

2. Orders Varied

1. Order No. 1079VO — Issued to Abex Industries Ltd., in accordance with the provision of Order-in-Council No. 278/86 dated the 12th day of May, 1986, in connection with the operation of a steel foundry located at or near 35 Mercy Street in the Town of Selkirk, Manitoba. — June 2

2. Order No. 1039VC — Issued to Manitoba Hydro in connection with the continued operation of the Brandon Thermal Generating Station complex including a generating plant, an ash lagoon, and coal stockpiles, located in the SW 1/4 of Section 20, Township 10, Range 18, WPM, in the City of Brandon, Manitoba. — July 17

3. Order No. 1023VC — Issued to the Village of Glenboro in connection with the operation of an expanded and upgraded sewage lagoon system located in the NW 1/4 of Section 10, Township 7, Range 14 WPM in the Village of Glenboro, Manitoba, with percolation of treated wastewater into the soil from the secondary cell of the said system. — August 25

4. Order No. 834VCCOO — Issued to Simplot Chemical Company Limited in compliance with the terms of Order-in-Council No. 938/86 dated the 27th day of August, 1986 varying the terms of Order No. 834VCCO in connection with the operation of a chemical fertilizer manufacturing plant located in the SW 1/4 of Section 18, Township 10, Range 18 WPM in the City of Brandon, Manitoba, with discharge of liquid wastes to irrigate croplands and to the Assiniboine River. — September 10

5. Order No. 1013VC — Issued to Hudson Bay Mining and Smelting Co. Limited in connection with the continued operation of a copper-zinc mining and smelting complex located in the E 1/2 of Section 1, Township 67, Range 30 WPM in the Province of Saskatchewan and in the W 1/2 of Section 6, Township 67, Range 29, near the City of Flin Flon in the Province of Manitoba, with discharge of tailings and liquid effluent into the Flin Flon Lake tailings area and with effluent drainage via Flin Flon Creek to Ross Lake, Ross Creek, and Schist Lake. — October 1

6. Order No. 1089VO — Issued to the City of Winnipeg in accordance with the provision of Order-in-Council No. 1215/86 dated the 29th day of October, 1986 in connection with the operation of sewage sludge dewatering and drying beds, located at the junction of the Perimeter Highway and Highway No. 8 in the Rural Municipality of West St. Paul, and in connection with the deposition of dewatered sewage sludge onto agricultural lands. — December 10

2. Orders Varied (Cont'd)

7.	Order No. 537VCCC — Issued to the City of Portage la Prairie in connection with the operation of a sewage treatment plant and an aerated sewage lagoon system located on River Lot 108 in Portage la Prairie Parish in the City of Portage la Prairie, Manitoba, with discharge of effluent to the Assiniboine River.	January 22
8.	Order No. 314VCO — Issued to the Town of Winnipeg Beach in connection with the operation of a five cell sewage lagoon system located in the SE 1/4 of Section 34, Township 17, Range 4 EPM in the Town of Winnipeg Beach and the NE 1/4 of Section 27, Township 17, Range 4 EPM in the Rural Municipality of St. Andrews, with discharge of effluent to Lake Winnipeg through a low lying swamp south of the lagoons.	March 18